

AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of Claims:

1. (Currently Amended) A controller capable of interacting with a remotely located computer, the controller comprising:
 - a. a data-gathering unit configured to gather data relevant to an industrial control function; and
 - b. a web server configured to periodically receive requests from the remotely located computer and, in response to the periodic requests thereto, configured to transmit to the remotely located computer instructions associated with the data, execution of the instructions by the remotely located computer causing said computer to present the data in a predetermined format wherein the data is displayed in a dynamic fashion on the remotely located computer.
2. (Original) The controller of claim 1 wherein the web server is configured to receive requests and transmit instructions over the Internet.
3. (Original) The controller of claim 1 wherein the web server implements TCP/IP.
4. (Original) The controller of claim 1 wherein requests are received and instructions transmitted in accordance with the HyperText Transfer Protocol.
5. (Original) The controller of claim 1 wherein the instructions define a web page for presentation on a browser running as an active process on the remotely located computer.
6. (Original) The controller of claim 5 wherein the controller comprises at least one input/output module, the web page comprising data gathered from the at least one module and formatting instructions.
7. (Previously Presented) The controller of claim 6 wherein the web page further comprises applet instructions execution of which causes the remotely located computer to periodically request updated data from the controller.

8. (Currently Amended) A method of obtaining and presenting data associated with a control system, the method comprising the steps of:

- a. gathering data relevant to an industrial control function;
- b. storing (i) the data and (ii) instructions defining a web page; and
- c. periodically receiving a request from the remotely located computer and, in response to the periodic request thereto, transmitting the instructions to the remotely located computer, execution of the instructions by the remotely located computer causing said computer to present the data in a dynamic fashion in accordance with the web page.

9. (Original) The method of claim 8 wherein requests are received and instructions transmitted over the Internet.

10. (Currently Amended) The method of claim 8 wherein ~~wherein~~ requests are received and instructions transmitted using TCP/IP.

11. (Original) The method of claim 8 wherein requests are received and instructions transmitted in accordance with the HyperText Transfer Protocol.

12. (Previously Presented) The method of claim 8 wherein the web page is presented by a browser running as an active process on the remotely located computer.

13. (Original) The method of claim 12 wherein the web page comprises (i) gathered data and (ii) formatting instructions.

14. (Previously Presented) The method of claim 13 wherein the web page further comprises applet instructions execution of which causes the remotely located computer to display the data in the dynamic fashion.

15. (Original) The method of claim 14 wherein the data is continuously generated, the instructions causing the remotely located computer to continuously request the changing data from the controller and to display the retrieved data.

16. (Previously Presented) The method of claim 8 wherein the control function comprises operation of an industrial machine, the data-gathering step comprising receiving data from the machine.

17. (Previously Presented) The method of claim 8 wherein the control function comprises operation of an industrial process, the data-gathering step comprising receiving data from equipment implementing the industrial process.

18-55. (Cancelled)

56. (Currently Amended) A method for distributing control and monitoring operations, comprising the steps of:

locating a remote controller on a network with a browser on a computer;

downloading a page defined by a markup language from the controller that includes status data from the controller and an embedded program for viewing the status data; and

periodically executing the embedded program on the computer and causing the status data from the controller to be displayed on the computer in a dynamic fashion.

57. (Previously Presented) The method of Claim 56, wherein:

the embedded program is a Java applet.

58. (Previously Presented) The method of Claim 56, wherein:

the embedded program is an ActiveX control.

59. (Previously Presented) The method of Claim 56, wherein:

the markup language is HTML.

60. (Previously Presented) The method of Claim 56, wherein:

the step of downloading is performed a single time.

61. (Previously Presented) The method of Claim 56, further comprising the steps of:

connecting the controller to a network; and

connecting a remote computer to the network.

62. (Previously Presented) The method of Claim 61, wherein:

the network is an Internet protocol network.

63. (Previously Presented) The method of Claim 62, wherein:

at least a portion of the network is the Internet.

64. (Previously Presented) The method of Claim 56, wherein:

the embedded program includes instructions for retrieving updated data from the remote controller and for causing the updated data to be displayed on the computer in the same page that was downloaded in the downloading step.

65. (Previously Presented) The method of Claim 56, wherein:

the page includes hyperlinks to other controllers on the network.

66. (Previously Presented) The method of Claim 65, further comprising the steps of:

selecting a hyperlink included on the page that corresponds to a second remote controller;
downloading a second page defined by a markup language from the second remote controller that includes status data from the second remote controller and a second embedded program for viewing the status data from the second remote controller; and

executing the second embedded program on the computer causing the status data from the second remote controller to be displayed on the computer.

67. (Currently Amended) A method for allowing remote monitoring of a programmable logic controller by sending a single message from the programmable logic controller to a monitoring computer, comprising the steps of:

storing data to be monitored in a memory location of the programmable logic controller that is accessible over a network;

sending a single message to the monitoring computer including a page defined by a markup language that includes an executable program that when executed on the monitoring computer will cause the monitoring computer to periodically retrieve the data to be monitored from the memory location and will cause the data to be monitored to be displayed dynamically in a predetermined format on the monitoring computer.

68. (Currently Amended) A system for allowing remote monitoring of a programmable logic controller by sending a single message from the programmable logic controller to a monitoring computer, comprising:

means for storing data to be monitored in a memory location of the programmable logic controller that is accessible over a network;

means for sending a single message to the monitoring computer including a page defined by a markup language;

means for including in the single message an executable program that when executed on the monitoring computer causes the monitoring computer to periodically retrieve the data to be monitored from the memory location and causes the data to be monitored to be displayed dynamically in a predetermined format on the monitoring computer.

69. (Currently Amended) A system for distributing control and monitoring operations, comprising:

means for controlling industrial equipment;

means for locating a remote controller on a network;

means for downloading from the means for controlling a page defined by a markup language that includes status data from the controller and an embedded program for viewing the status data; and

means for periodically executing the embedded program on the computer and means for causing the status data from the controller to be dynamically displayed on the remote computer.

70-125. (Cancelled)

126. (Currently Amended) A computer implemented factory automation control system, comprising:

a remote computer having

a processor, and

a memory having stored therein an executable program having processor readable instructions that when executed by said remote computer implements a factory automation control mechanism configured to cause said remote computer to periodically access a memory of a controller controlling equipment of a factory automation system via a browser, to display in the browser information relating to data stored in the memory of the controller, and to change the data stored in the memory of the controller by manipulating the information displayed in the browser.

127. (Currently Amended) A method of controlling a factory automation system using a browser comprising the steps of:

periodically accessing a memory of a controller controlling equipment of a factory automation system with a browser;

displaying in the browser information relating to data stored in the memory of the controller; and

changing the data stored in the memory of the controller by manipulating the information displayed in the browser.

128. (Currently Amended) A computer readable medium containing program instructions for execution on a computer system, which when executed by the computer system, cause the computer system to perform the steps of:

periodically accessing a memory of a controller controlling equipment of a factory automation system with a browser;
displaying in the browser information relating to data stored in the memory of the controller; and
changing the data stored in the memory of the controller by manipulating the information displayed in the browser.